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Global Smart Motors for Robotics Market 2023

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Abstracts

Description

The global market for smart motors used in robotics and automation exhibits tremendous growth potential, forecast to rise at a CAGR exceeding 5.8% over 2023-2029. This rapid expansion is expected to generate over USD 1.6 billion in additional market value within the next five years.

The proliferation of smart motors in robotic systems is catalyzed by the surging demand for automation across diverse spheres including manufacturing, healthcare, automotive, electronics, logistics and more. These motors are highly valued for their precision, efficiency, responsiveness and connectivity. By enabling motion control with built-in feedback and self-correction capabilities, smart motors fulfill an indispensable role across automated processes.

Additional tailwinds spurring the adoption of smart robotic motors include the rising focus on energy-efficient and sustainable manufacturing, and the integration of emerging technologies like artificial intelligence, machine learning and the Industrial Internet of Things (IIoT). Embedding AI facilitates predictive maintenance and ambient analyzing abilities in motors. Connectivity allows remote monitoring, diagnostics and expert collaboration. These intelligent capabilities expand the versatility, autonomy and value proposition of smart motors for robotics.

As robotic systems permeate the industrial automation landscape, smart motors are simultaneously witnessing massive demand growth as a key hardware component powering automated workflows. This symbiotic relationship between smart motors and industrial automation is transforming manufacturing, supply chains, warehousing, logistics and healthcare %li%ushering in radically improved productivity, efficiency, accuracy and speed.

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For instance, collaborative robots equipped with smart servo motors can work alongside humans on assembly lines, dynamically optimizing motion for maximum safety. In warehouses, AGV fleets rely on smart vectored drive motors to navigate, traverse and handle variable payloads. Across industries, the fusion of AI-enabled smart motors with advanced robotics promises to revolutionize operations.

The outlook for the smart motors market remains highly optimistic, as innovations in sensing, connectivity and analytics expand the capabilities of motion control. With Industry 4.0 initiatives gaining momentum globally, leading vendors are investing in integrated motor-drive systems tailored for robotics along with smart software and IoT infrastructure. Customers from manufacturing units to hospitals are increasingly waking up to the transformational potential of intelligent robotic systems underpinned by smart motors. This confluence of robotics automation and AI-centric motion control will catalyze the next phase of growth for the global smart motors industry.

Market Segmentation

This industry report offers market estimates and forecasts of the global market, followed by a detailed analysis of the component, product, application, and geography.

By Component

Hardware

Software

By Product

12V

18V

24V

36V

48V,

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Above 48V

By Application

Military Robotics (Unmanned Aerial Vehicle (UAV), Unmanned Ground Vehicle (UGV), Unmanned Maritime Vehicle (UMV), Bomb Disposal Robot, Tactical Robot, Robotic Exoskeleton, Autonomous Weapon System)

Commercial Robotics (Industrial Robot, Service Robot, Medical Robot, Agricultural Robot, Inspection and Maintenance Robot, Cleaning Robot, Warehouse and Logistics Robot)

By Geography

North America

Europe

Asia Pacific

Rest of the World

In manufacturing, smart servo motors facilitate precision motion control in robotic arms on production lines, achieving highly accurate repetitive tasks. Collaborative robots with integrated motor drives can work safely alongside humans. Logistics companies employ fleets of automated guided vehicles and mobile picking robots powered by smart vector or traction motors to shuttle loads efficiently in warehouses and yards. In hospitals, smart motor-driven robotics aid in streamlining mundane tasks such as sanitizing patient rooms, handling samples and specimens, and transporting pharmaceuticals, freeing up clinical staff for higher-value responsibilities. Autonomous delivery robots outfitted with smart motors bring medicines, meals or supplies directly to patients' bedsides. Across retail settings and supermarkets, robotic solutions are taking over dangerous, labor intensive jobs. Smart motor-powered robots can rapidly scan shelves to monitor stock levels, identify misplaced items, check for expired products and more. Shelf analytics and restocking is automated.

As businesses aim for leaner operations and enhanced competitiveness, the applicability of AI-enabled commercial robotics continues to widen %li%spanning material handling, cleaning, delivery, security, exoskeletons, cobots and service robots.

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With each new use case and geography, the market for their enabling smart motors expands. Vendors are responding with highly efficient servo, vector and direct drive motors with modularity and IoT connectivity to tap this burgeoning opportunity.

Major Companies and Competitive Landscape

The report also provides a detailed analysis of several leading smart motors for robotics market vendors that include ABB Ltd., Dunkermotoren GmbH, Fuji Electric Co., Ltd., General Electric Company, Hoyer Group A/S, HSD SpA, Kollmorgen Corporation (Regal Rexnord Corporation), Lenze Gruppe, Moog Inc., Nanotec Electronic GmbH & Co. KG, Nidec Corporation, Roboteq, Inc., Rockwell Automation, Inc., Schneider Electric SE, Siemens AG, Yaskawa Electric Corporation, among others. In this report, key players and their strategies are thoroughly analyzed to understand the competitive outlook of the market.

Why Choose This Report

Gain a reliable outlook of the global smart motors for robotics market forecasts from 2023 to 2029 across scenarios.

Identify growth segments for investment.

Stay ahead of competitors through company profiles and market data.

The market estimate for ease of analysis across scenarios in Excel format.

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